

Ultra High Dynamic Range Broadband Amplifier

ZFL-272VH+

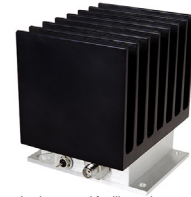
50Ω 0.03 to 2.7 GHz

Features

- High IP3, 47dBm typ. at 1GHz
- Gain, 17dB typ. at 1GHz
- High Pout, P1dB 30dBm typ. at 1GHz
- Internally regulated DC and reverse voltage protected

Applications

- Base station infrastructure
- LTE



Generic photo used for illustration purposes only

CASE STYLE: AW2740

| Connectors | Model |
|------------|------------|
| SMA | ZFL-272VH+ |

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C, V_{DD}=15V unless noted

| Parameter | Condition (MHz) | V _{DD} =15V | | | Units |
|--------------------------------|-----------------|----------------------|------|------|-------|
| | | Min. | Typ. | Max. | |
| Frequency range | | 0.03 | | 2.7 | GHz |
| Gain | 30 | — | 17.4 | — | dB |
| | 500 | — | 17.8 | — | |
| | 1000 | — | 16.9 | — | |
| | 2000 | 13.1 | 14.5 | 16.1 | |
| | 2700 | — | 12.6 | — | |
| Input return loss | 30 | — | 11.6 | — | dB |
| | 500 | — | 24.7 | — | |
| | 1000 | — | 23.2 | — | |
| | 2000 | — | 21.2 | — | |
| | 2700 | — | 13.2 | — | |
| Output return loss | 30 | — | 14.1 | — | dB |
| | 500 | — | 15.5 | — | |
| | 1000 | — | 17.3 | — | |
| | 2000 | — | 19.0 | — | |
| | 2700 | — | 10.4 | — | |
| Reverse isolation | 2000 | — | 23 | — | dB |
| Output power @ 1dB compression | 30 | — | 29.1 | — | dBm |
| | 500 | — | 29.5 | — | |
| | 1000 | — | 29.5 | — | |
| | 2000 | — | 27.7 | — | |
| | 2700 | — | 25.0 | — | |
| Output IP3 ¹ | 30 | — | 49.8 | — | dBm |
| | 500 | — | 49.3 | — | |
| | 1000 | — | 47.2 | — | |
| | 2000 | — | 43.0 | — | |
| | 2700 | — | 42.0 | — | |
| Noise figure | 30 | — | 4.2 | — | dB |
| | 500 | — | 3.1 | — | |
| | 1000 | — | 3.4 | — | |
| | 2000 | — | 4.4 | — | |
| | 2700 | — | 5.2 | — | |
| Device operating voltage | | 15 | 15 | — | V |
| Device operating current | | — | 350 | 416 | mA |

1. Tested at Pout=16 dBm / tone



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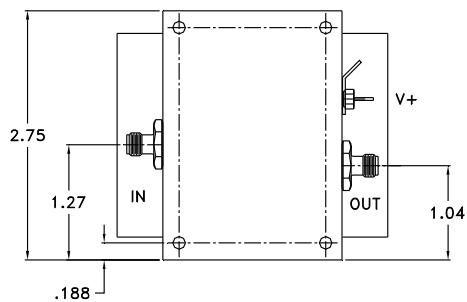
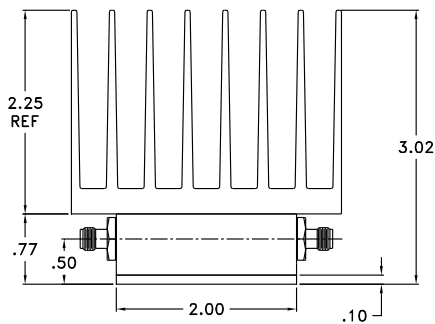
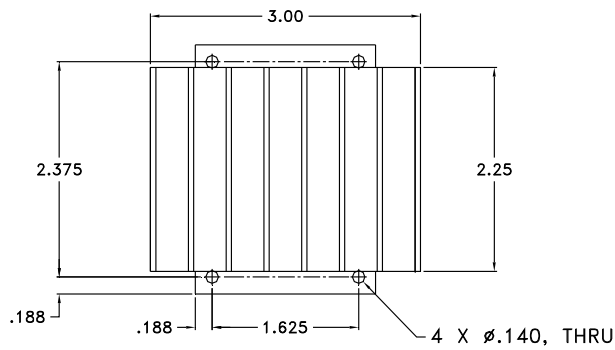
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Page 1 of 4

Maximum Ratings

| Parameter | Ratings |
|----------------------------|---|
| Operating Temperature | -40°C to 60°C |
| Storage Temperature | -55°C to 100°C |
| Input RF Power (no damage) | +24 dBm (5 minutes max.) 19 dBm (continuous) |
| DC Voltage | +17V |

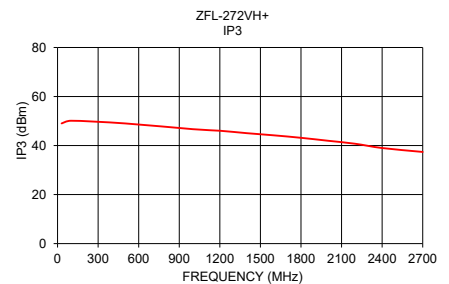
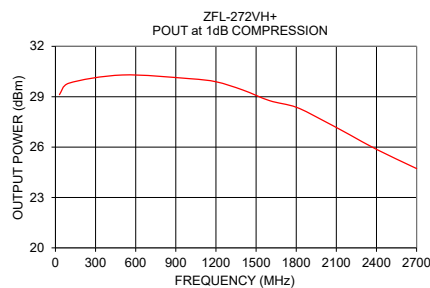
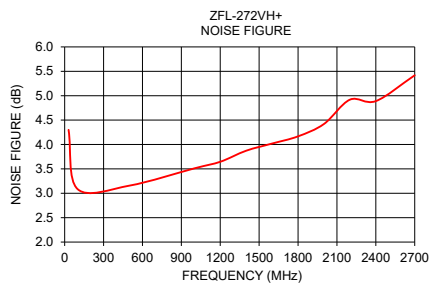
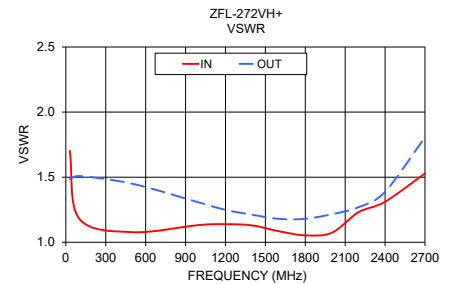
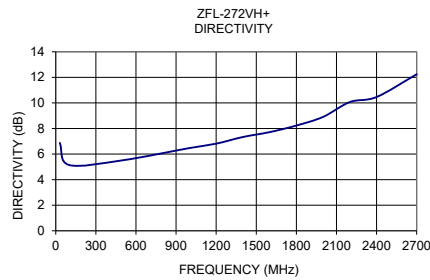
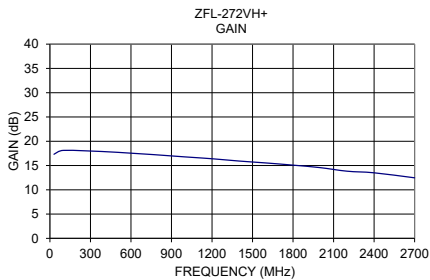
Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Weight: 360 grams

| FREQUENCY (MHz) | GAIN (dB) | DIRECIVITY (dB) | VSWR (:1) | | NOISE FIGURE (dB) | POUT at 1 dB COMPR. (dBm) | IP3 (dBm) |
|-----------------|-----------|-----------------|-----------|------|-------------------|---------------------------|-----------|
| | | | IN | OUT | | | |
| 30 | 17.32 | 6.87 | 1.70 | 1.49 | 4.30 | 29.12 | 49.02 |
| 100 | 18.12 | 5.15 | 1.18 | 1.51 | 3.08 | 29.80 | 50.11 |
| 500 | 17.72 | 5.51 | 1.08 | 1.45 | 3.16 | 30.29 | 49.02 |
| 1000 | 16.78 | 6.47 | 1.13 | 1.31 | 3.51 | 30.08 | 46.68 |
| 1200 | 16.40 | 6.81 | 1.14 | 1.25 | 3.65 | 29.89 | 46.04 |
| 1400 | 15.92 | 7.33 | 1.13 | 1.21 | 3.87 | 29.40 | 45.04 |
| 1600 | 15.53 | 7.72 | 1.09 | 1.18 | 4.02 | 28.77 | 44.16 |
| 1800 | 15.08 | 8.23 | 1.05 | 1.18 | 4.17 | 28.38 | 43.16 |
| 2000 | 14.57 | 8.91 | 1.07 | 1.22 | 4.42 | 27.59 | 41.95 |
| 2200 | 13.83 | 10.07 | 1.23 | 1.27 | 4.92 | 26.74 | 40.73 |
| 2400 | 13.50 | 10.46 | 1.31 | 1.39 | 4.89 | 25.87 | 38.99 |
| 2700 | 12.47 | 12.24 | 1.53 | 1.81 | 5.42 | 24.72 | 37.39 |



Additional Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Coaxial Amplifier

ZFL-272VH+

Typical Performance Data

| FREQUENCY (MHz) | GAIN (dB) 15V | DIRECTIVITY (dB) 15V | VSWR (:1) | | NOISE FIGURE (dB) 15V | POUT @ 1 dB COMPRESSION (dBm) 15V | OUTPUT IP3 (dBm) 15V |
|--------------------|---------------------|----------------------------|-----------|------------|-----------------------------|--|----------------------------|
| | | | IN 15V | OUT 15V | | | |
| 30 | 17.32 | 6.87 | 1.70 | 1.49 | 4.30 | 29.12 | 49.02 |
| 50 | 17.88 | 5.69 | 1.40 | 1.50 | 3.67 | 29.77 | 49.98 |
| 100 | 18.12 | 5.15 | 1.18 | 1.51 | 3.08 | 29.80 | 50.11 |
| 150 | 18.14 | 5.07 | 1.12 | 1.51 | 3.07 | 29.89 | 50.84 |
| 200 | 18.10 | 5.09 | 1.09 | 1.50 | 2.98 | 29.94 | 51.15 |
| 250 | 18.06 | 5.14 | 1.07 | 1.50 | 3.04 | 30.10 | 51.87 |
| 300 | 18.00 | 5.20 | 1.06 | 1.49 | 3.08 | 30.14 | 50.28 |
| 350 | 17.95 | 5.26 | 1.06 | 1.48 | 3.04 | 29.98 | 49.30 |
| 400 | 17.88 | 5.34 | 1.07 | 1.47 | 3.06 | 30.15 | 49.08 |
| 450 | 17.80 | 5.42 | 1.07 | 1.46 | 3.14 | 30.20 | 49.13 |
| 500 | 17.72 | 5.51 | 1.08 | 1.45 | 3.16 | 30.29 | 49.02 |
| 550 | 17.64 | 5.59 | 1.08 | 1.44 | 3.21 | 30.19 | 48.71 |
| 600 | 17.57 | 5.65 | 1.09 | 1.43 | 3.38 | 30.30 | 48.83 |
| 650 | 17.49 | 5.72 | 1.10 | 1.42 | 3.28 | 30.46 | 48.26 |
| 700 | 17.41 | 5.79 | 1.10 | 1.40 | 3.51 | 30.24 | 47.94 |
| 750 | 17.32 | 5.88 | 1.11 | 1.39 | 3.86 | 30.33 | 47.57 |
| 800 | 17.23 | 5.97 | 1.12 | 1.37 | 3.35 | 30.20 | 47.18 |
| 850 | 17.13 | 6.07 | 1.12 | 1.36 | 3.37 | 30.29 | 47.10 |
| 900 | 17.02 | 6.19 | 1.12 | 1.34 | 3.51 | 30.26 | 47.00 |
| 950 | 16.88 | 6.37 | 1.12 | 1.32 | 3.47 | 30.11 | 46.77 |
| 1000 | 16.78 | 6.47 | 1.13 | 1.31 | 3.51 | 30.08 | 46.68 |
| 1050 | 16.68 | 6.57 | 1.14 | 1.29 | 3.53 | 30.07 | 46.73 |
| 1100 | 16.60 | 6.63 | 1.14 | 1.27 | 3.56 | 29.98 | 46.56 |
| 1150 | 16.50 | 6.72 | 1.14 | 1.26 | 3.66 | 30.09 | 46.46 |
| 1200 | 16.40 | 6.81 | 1.14 | 1.25 | 3.65 | 29.89 | 46.04 |
| 1250 | 16.29 | 6.92 | 1.14 | 1.24 | 3.69 | 29.81 | 45.72 |
| 1300 | 16.19 | 7.02 | 1.13 | 1.23 | 3.74 | 29.74 | 45.37 |
| 1350 | 16.07 | 7.15 | 1.13 | 1.22 | 3.81 | 29.59 | 45.08 |
| 1400 | 15.92 | 7.33 | 1.13 | 1.21 | 3.87 | 29.40 | 45.04 |
| 1450 | 15.85 | 7.38 | 1.12 | 1.20 | 3.88 | 29.07 | 44.60 |
| 1500 | 15.75 | 7.48 | 1.11 | 1.19 | 3.94 | 29.03 | 44.49 |
| 1550 | 15.64 | 7.60 | 1.10 | 1.18 | 3.97 | 29.06 | 44.38 |
| 1600 | 15.53 | 7.72 | 1.09 | 1.18 | 4.02 | 28.77 | 44.16 |
| 1650 | 15.42 | 7.84 | 1.07 | 1.18 | 4.05 | 28.63 | 43.94 |
| 1700 | 15.31 | 7.96 | 1.07 | 1.18 | 4.05 | 28.33 | 43.46 |
| 1750 | 15.20 | 8.09 | 1.06 | 1.18 | 4.09 | 28.31 | 43.16 |
| 1800 | 15.08 | 8.23 | 1.05 | 1.18 | 4.17 | 28.38 | 43.16 |
| 1850 | 14.96 | 8.38 | 1.05 | 1.18 | 4.22 | 28.18 | 42.96 |
| 1900 | 14.84 | 8.54 | 1.06 | 1.19 | 4.25 | 28.01 | 42.62 |
| 1950 | 14.71 | 8.71 | 1.06 | 1.20 | 4.88 | 27.74 | 42.25 |
| 2000 | 14.57 | 8.91 | 1.07 | 1.22 | 4.42 | 27.59 | 41.95 |
| 2050 | 14.39 | 9.18 | 1.08 | 1.24 | 4.49 | 27.38 | 41.70 |
| 2100 | 14.14 | 9.60 | 1.11 | 1.26 | 4.67 | 27.28 | 41.60 |
| 2150 | 13.86 | 10.10 | 1.18 | 1.28 | 5.19 | 27.18 | 41.41 |
| 2200 | 13.83 | 10.07 | 1.23 | 1.27 | 4.92 | 26.74 | 40.73 |
| 2250 | 13.83 | 10.00 | 1.25 | 1.28 | 4.79 | 26.69 | 40.63 |
| 2300 | 13.75 | 10.09 | 1.27 | 1.31 | 4.82 | 26.32 | 40.11 |
| 2350 | 13.63 | 10.26 | 1.29 | 1.34 | 4.85 | 26.22 | 39.86 |
| 2400 | 13.50 | 10.46 | 1.31 | 1.39 | 4.89 | 25.87 | 38.99 |
| 2450 | 13.36 | 10.69 | 1.34 | 1.44 | 5.01 | 25.87 | 39.04 |
| 2500 | 13.20 | 10.95 | 1.37 | 1.49 | 5.01 | 25.63 | 38.41 |
| 2550 | 13.03 | 11.24 | 1.40 | 1.56 | 5.16 | 25.66 | 38.89 |
| 2600 | 12.86 | 11.55 | 1.44 | 1.63 | 5.23 | 25.13 | 37.98 |
| 2650 | 12.67 | 11.88 | 1.48 | 1.71 | 5.30 | 25.27 | 38.10 |
| 2700 | 12.47 | 12.24 | 1.53 | 1.81 | 5.42 | 24.72 | 37.39 |
| 2750 | 12.26 | 12.63 | 1.58 | 1.91 | 5.46 | 24.99 | 38.08 |
| 2800 | 12.04 | 13.04 | 1.63 | 2.03 | 5.61 | 24.35 | 36.76 |
| 2850 | 11.80 | 13.48 | 1.69 | 2.16 | 5.66 | 24.38 | 36.86 |
| 2900 | 11.56 | 13.95 | 1.76 | 2.30 | 5.74 | 24.18 | 36.23 |
| 2950 | 11.30 | 14.46 | 1.82 | 2.46 | 5.83 | 23.86 | 35.54 |
| 3000 | 11.04 | 14.98 | 1.90 | 2.64 | 5.85 | 23.50 | 34.97 |



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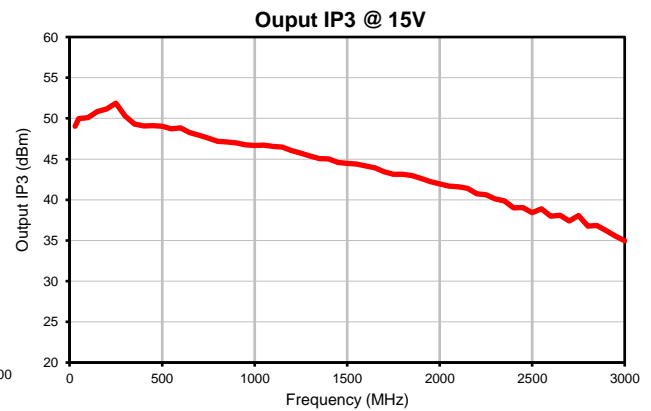
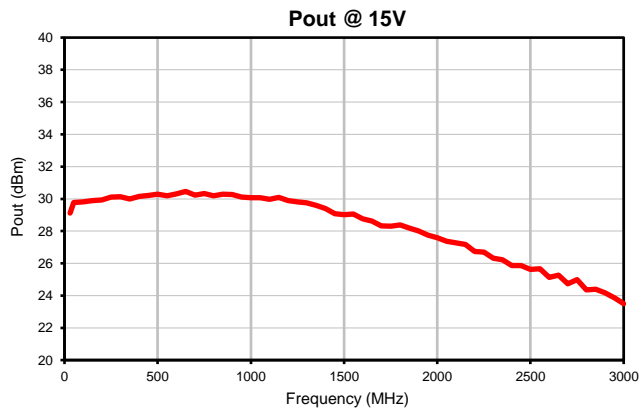
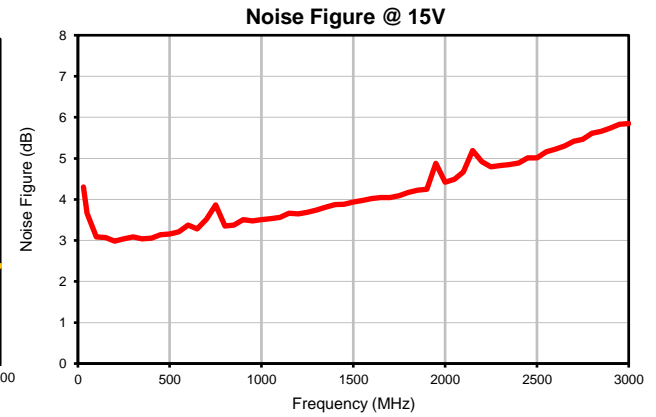
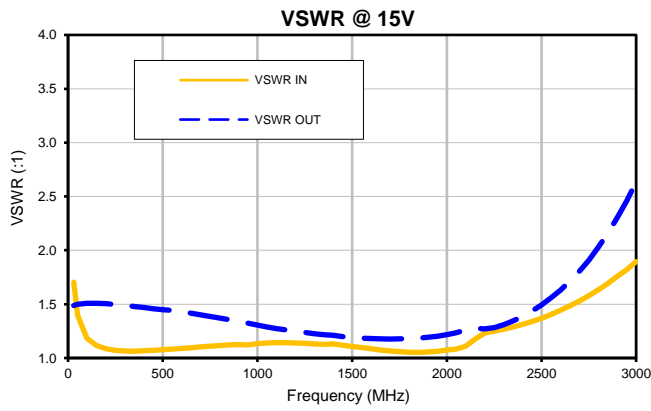
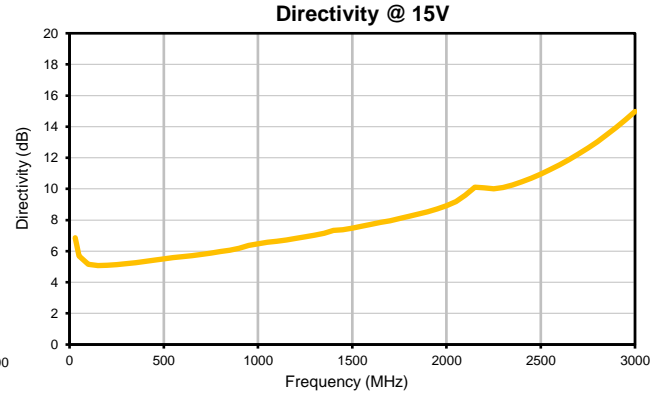
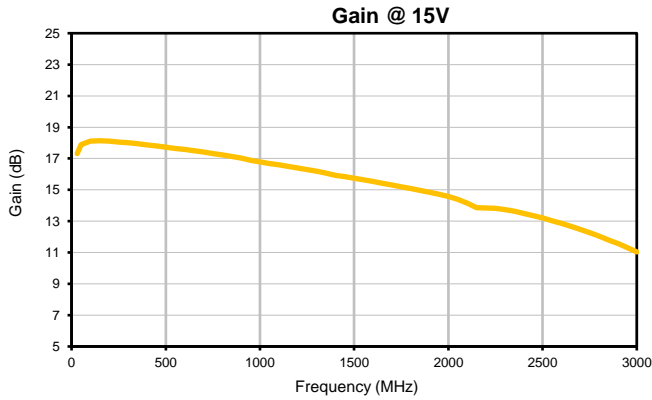


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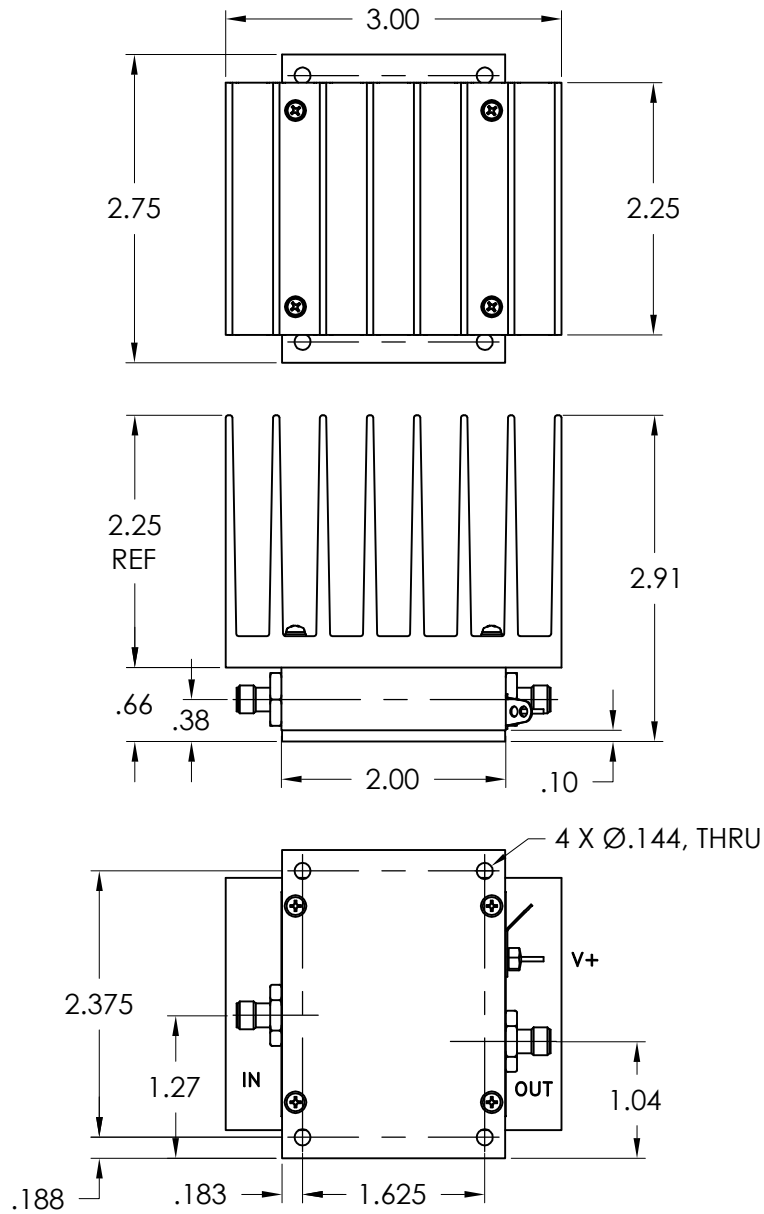
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Page 1 of 1

Typical Performance Curves



Outline Dimensions

AW2740



Weight: 360 grams

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

1. Case material: Aluminum alloy
2. Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. Heat sink finish: Black anodize.

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